

ABSTRACT

It is an object of the present invention to provide a chemical conversion coating agent containing no chromium and
5 capable of applying good chemical conversion treatment which is equal to or more than chemical conversion treatment by zinc phosphate to all metals such as iron, zinc and aluminum.

A chemical conversion coating agent comprising:

at least one kind selected from the group consisting of
10 zirconium, titanium and hafnium;
fluorine; and

a water-soluble epoxy compound containing an isocyanate group and/or a melamine group,

wherein a content of the at least one kind selected from
15 the group consisting of zirconium, titanium and hafnium in the chemical conversion coating agent is 20 to 10000 ppm in terms of metal, and

a content of the water-soluble epoxy compound containing the isocyanate group and/or the melamine group in the chemical
20 conversion coating agent is 5 to 5000 ppm as a concentration of solid matter.